

UNITED STATES DISTRICT COURT  
SOUTHERN DISTRICT OF NEW YORK

IN RE AUTOHOP LITIGATION

This Document Relates To:

DISH Network L.L.C., 12 Civ. 4155  
(LTS)(KNF)

12 Civ. 4155 (LTS) (KNF)

**DECLARATION OF DAVID KUMMER**  
**PUBLIC FILING,**  
**ORIGINAL FILED UNDER SEAL**

I, David Kummer, declare:

1. I am Chief Technology Officer at EchoStar Technologies L.L.C. (“EchoStar”). Except as otherwise stated herein, I have personal knowledge of the facts stated in this declaration, base them upon the books and records of EchoStar, or upon information provided to me in the regular course of business by other EchoStar employees with personal knowledge of such facts, and can testify on them competently if called upon to do so.
2. I submit this declaration in opposition to ABC’s Motion for Preliminary Injunction.
3. EchoStar is a technology vendor to Defendant DISH Network L.L.C. (“DISH”) that, among other things, supplies DISH with satellite television retransmission services. EchoStar manages the processing and delivery of satellite television signals to all DISH subscribers. I have worked at EchoStar since 1993. In my current position, I have responsibility for Systems Architecture, as well as set-top boxes (“STBs”) and digital video recorders (“DVRs”). Systems Architecture includes the entirety of the satellite television delivery system, encompassing both the uplink and downlink processes.
4. In order to deliver television content to DISH subscribers, EchoStar assembles that content into defined subscriber packages, consisting of a collection of television stations or channels. The assembly process occurs at broadcast centers and regional uplink facilities that are scattered across the country. The largest center that EchoStar operates for DISH is located in Cheyenne, Wyoming.

5. At the broadcast centers, regional uplink facilities or local receive facilities, the television feeds from broadcast and cable stations are compressed, remixed into groups of channels to match the size of satellite transponders, scrambled and modulated so that they can be broadcast to orbiting satellites on a specified radio frequency.

6. The compression process is necessary to reduce the size of the transmission feeds to allow them to be efficiently managed by the satellites. Uncompressed HD video for one television station could consume an entire satellite and would drastically reduce the number of channels that DISH could offer its subscribers. The industry standard for video compression is known as MPEG, which was developed by the "Moving Picture Experts Group." EchoStar compresses the television feeds in MPEG format.

7. The compression is done by something known as a "encoder." After encoding is completed, a multiplexer combines multiple television channels into a single transport stream that can be sent to the satellite for transmission through a single transponder.

8. From the broadcast and uplink centers, DISH transmits a scrambled transport stream signal to a fleet of satellites that are in geostationary orbit above the Earth. The signals are scrambled to avoid unauthorized access by non-subscribers. The orbiting satellites receive the signals and transmit them back down to Earth using designated portions of the microwave radio spectrum. DISH subscribers can then access the signals using a dish-shaped antenna that is typically mounted on or near the subscriber's home.

9. Once received by the dish-shaped antenna, the signal is relayed to a receiver (also known as a set-top box or "STB") that is typically located near to the television set and connected to the television. The STB demultiplexes the transport stream, descrambles the scrambled signal, and then decodes the compressed signal back into the original media streams. This process allows the DISH subscriber to watch television content from DISH's satellite system on their home television sets.

10. EchoStar monitors all of the local television channels broadcast to DISH's subscribers in the United States at the broadcast and uplink centers in Cheyenne, Wyoming and


Gilbert, Arizona. The signals for the local channels are generally carried on an IP Multicast System with connectivity in Cheyenne and Gilbert. A multicast is a “one-to-many” media delivery process that allows common access to a single network media source. A multicast allows a single source to send the same information to multiple locations. Each media stream can be accessed on the multicast by use of the multicast IP and port address. EchoStar uses a IP Multicast System provided by Sprint.

11. EchoStar does the encoding and multiplexing for satellite uplink at its regional uplink centers and facilities in Cheyenne and Gilbert. Those facilities operate a large network of satellite dishes. The Cheyenne and Gilbert facilities receive the channel signals that they retransmit in various ways, including by satellite transmission, fiber optic cable and use of over the air antennae. Regional broadcast and uplink centers pick up signals by over-the-air antennae and fiber optic cable in those local markets, encode the signals and upload them onto the IP Multicast System. The regional broadcast and uplink centers also retransmit the encoded signals to Cheyenne or Gilbert via a Multiprotocol Label Switching (“MPLS”) Telecommunications Network for processing and uplink to the satellite system.

12. As stated above, television signals are compressed and multiplexed in order to allow one satellite transponder to handle multiple signals for multiple television channels or stations. For most local markets, EchoStar historically, prior to the implementation of the PrimeTime Anytime feature on the Hopper, multiplexed the signals for the four major television networks together to be transmitted on a common satellite transponder. EchoStar has historically done so for the reason that it is most efficient to have the local broadcast stations for a particular market located together for transmission to that market.

I declare under penalty of perjury under the laws of the United States that the foregoing is true and correct.

Executed this 19<sup>th</sup> day of Dec, 2012, at 12:05 PM.

  
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David Kummer